

Ismaila Emahi

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Department Department of Chemical Sciences
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Education

2012 - 2015 PhD Chemistry, St. Louis University, MO, USA
2010 - 2012 MS Chemistry, St. Louis University, MO, USA
2006 - 2007 MSc Water & Environmental Engineering, University of Gloucestershire, UK
2001 - 2015 BSc Chemistry, Kwame Nkrumah University of Science and Technology, Ghana

Employment History

2020 - present Senior Lecturer, University of Energy & Natural Resources, Sunyani, Ghana
2018 - 2020 Lecturer, University of Energy & Natural Resources, Sunyani, Ghana
2016 - 2017 Visiting Lecturer, University of Richmond, VA, USA
2015 - 2016 Lecturer, Southern Illinois University Edwardsville, IL, USA
2010 - 2015 Graduate Research Assistant, St. Louis University, MO, USA
2008 - 2010 Science Tutor, Goshen International School, Tema, Ghana
2005 - 2006 Teaching Assistant, Kwame Nkrumah University of Sci & Tech, Kumasi, Ghana

Fellowships, Scientific Visits, and Awards

Mar - Jun 2025 Iso Lomso Fellow, Stellenbosch Institute for Advanced Study, South Africa
Sep - Oct 2024 Guest Scientist, Institute of Chemistry, Freie Universität Berlin, Germany
Sep - Dec 2023 Fellow, College of Life Sciences, Wissenschaftskolleg zu Berlin, Germany
May - Jun 2023 Visiting Researcher, Department of Chemistry, University of Cambridge, UK
2021- 2022 Africa Oxford Fellow (virtual), Department of Chemistry, University of Oxford, UK
2020- 2021 Fellow, Africa Science Leadership Programme, University of Pretoria, South Africa
Sep - Dec 2021 Iso Lomso Fellow, Stellenbosch Institute for Advanced Study, South Africa
July 2015 Outstanding Doctoral Student, Department of Chemistry, St. Louis University, USA

Grants and third-party funding

Period	Funding Source	Volume	Role	Title
2024-2025	UENR Grant Funding Programme, Sunyani	total: - 25,000 GHS	PI	Identification and Characterization of DNA Aptamers for Arsenic
2024-2025	U.S. DoS, US Embassy, Accra	total: - 5,000 USD	Co-PI	Investigating the Selectivity of Agricultural Waste Adsorbents towards various Metal ions in Water.
2022-2024	Alborada Trust	total: 20,000 GBP	Co-PI	Electrode Modification Strategies for

				Electrochemical Detection of Nitrates
2019	Seeding Labs, USA	total: 110,000 USD	PI	Instrumental Access Program- Request for equipment
13-16 Dec 2022	Federation of African Societies of Chemistry, Marrakech	Full travel support	Presenter	Atlantic Basin Conference on Chemistry (ABCChem) conference
20-23 Nov 2019	African Union, Abuja	Full travel support	Presenter	African Scientific Research and Innovation Council's (ASRIC) 2 nd Congress in Abuja, Nigeria

Professional Affiliations and Contributions

2024 - present	Chair Elect, ACS Ghana International Chemical Sciences Chapter
2024 - present	Judge, ACS National Illustrated Poem Contest
2024 - present	Reviewer, Scientific African journal
2023 - present	Reviewer, Iso Lomso Fellowship Applications
2023 - present	ACS Committee on Community Activities
2023 - present	Ghana Chemical Society
2023 – present	The Biochemical Society
2020 – 2021	Reviewer, Journal of Environmental Chemical Engineering
2019 – present	Faculty Advisor, ACS International Student Chapter, UENR
2019 – present	Member, Ghana Science Association (GSA)
2014 – present	Member, American Chemical Society (ACS)

University Administrative Experience

2023 – 2025	University Liaison Officer
2021 – 2023	University Student Industrial Attachment Coordinator
2020 – 2021	Head, Department of Chemical Sciences

Publications

A) Publications with peer review process

1. Safo-Adu, G.*, Attiogbe, F., Ofosu, F. G., **Emahi**, I., Palm, L.N.D.M., and Enimil, E. (2025). Polycyclic aromatic compounds in ambient PM_{2.5} in the central region of Ghana: Molecular distribution, origin and cancer risk assessment. *Atmospheric Environment*, 343 (2025) 120973.
2. Safo-Adu, G.*, Attiogbe, F., Ofosu, F. G., and **Emahi**, I. (2025). Particulate matter levels in the atmosphere and their temporal variations in an urban fish smoking community and a busy highway interchange. *Internatioanl Journal of Envriomental Studies*. DOI: 10.1080/00207233.2024.2444850.

3. Safo-Adu, G.*., Attiogbe, F., Ofosu, F. G., **Emahi, I.**, Gyampo, O., and Ahiamadjie, H. (2024). Assessment of Chemical Composition and Health Implications Associated with PM10 Exposure: A Comparative Study of an Urban Road Intersection and a Wood-Burning Vicinity, *Environmental Forensics*, DOI: 10.1080/15275922.2024.2431321.
4. Mohammed, A.R., Attiogbe, F., and **Emahi, I.*** (2024). "Improved greywater quality after biofiltration with a fibre-biofilter derived from plantain pseudo stem". *Scientific African*, 25(2024), e02293.
5. Boakye, A., Attiogbe, F., and **Emahi, I.*** (2024). Crescentia Cujete Fruit Shell as Green and Efficient Coagulant for Water Purification. *Cleaner Water*, 1(2024), 100009.
6. Safo-Adu, G*., Attiogbe, F., **Emahi, I.**, and Ofosu, F. G. (2023). Outdoor and indoor particulate air pollution and its health consequences in African cities: New evidence and an exhortation. *Sustainable Environment*, **9(1)**, 2265729.
7. Safo-Adu, G*., Attiogbe, F., **Emahi, I.**, and Ofosu, F. G. (2023). A review of the sources, distribution pattern, and health risk of exposure to atmospheric polycyclic aromatic hydrocarbons: A review. *Cogent Engineering*, **10**, 1-29.
8. Sakyi, P. O.*, Amewu, R. K., Devine, R. N. O. A., **Emahi, I.**, Miller W. A. and Kwofie, S. K. (2021). "The Search for Putative Hits in Combating Leishmaniasis: The Contributions of Natural Products over the Last Decade". *Nat. Prod. Bioprospect.* **11**, 489-544.
9. **Emahi, I.***, Watts, M.C.N.C, Azibere, S., Morrison, J., and Sarpong, K. A. N. (2021). "Covid-19 in Africa: rethinking the tools to manage future pandemics". *African Health Sciences*, 21(4), 1509-1517.
10. Bienibuor, A.K.*, Preko, K., Aning, A. A., Antwi, M., and **Emahi, I.** (2020). Application of Electromagnetic and Electrical Resistivity Methods for Borehole Siting in Low-Grade Metavolcanic and Metasedimentary Rocks, Sunyani West, Ghana, *J. Environment and Science*, 10 (10), 44-55.
11. **Emahi, I.***, Sakyi P. O., & Hamzah H. M. (2020) "Removal of toxic metals from water using cabbage, carrot, and lettuce as biofilters". *ASRIC Journal on Agricultural Sciences* 1 (2020) 35-42
12. **Emahi, I.***, Sakyi P. O., Bruce-Vanderpuije, P. & Issifu, A-R. (2019) "Effectiveness of raw versus activated coconut shells for removing arsenic and mercury from water". *ENRR*, **9**, 127-134.
13. Sakyi P. O.*, Bienebuor A. K., Akuamoah R. K., **Emahi, I.**, Brimah A. K. (2019) "The Photolytic Cleavage of Methylpyridinecobaloxime as a Mimetic of Vitamin B₁₂". *IJASR*, **5**, 28-41.
14. **Emahi, I.**, Mitchell, P. M., and Baum, D. A.* (2017). "Electrochemistry of PQQ on Multi-Walled Carbon Nanotube-Modified Glassy Carbon Electrodes in Biological Buffers". *J. Electrochem. Soc.*, **164**, H3097-H3102.
15. **Emahi, I.**, Gruenke P. R., and Baum, D. A.* (2015). "Effect of Aptamer Binding on the Electron-Transfer Properties of Redox Cofactors". *J. Mol. Evol.*, **81**, 186-193.
16. **Emahi, I.**, Mulvihill, I. M., and Baum, D. A.* (2015). "Pyrroloquinoline quinone maintains redox activity when bound to a DNA aptamer". *RSC Adv.*, **5**, 7450-7453.
17. Korang, J., **Emahi, I.**, Grither, W. R., Bauman, S. M., Baum, D. A., and McCulla, R. D.* (2013). "Photoinduced DNA cleavage by atomic oxygen precursors in aqueous solutions". *RSC Adv.*, **3**, 12390-12397.

B) Preprints

1. **Emahi, I.**, Boakye A., and Fosu, T. (2020). "DNA aptamers for redox cofactors as possible catalysts for biofuel cells". *Everyday Science for Schools Magazine.*, 8(1), 14-15
2. Ayim, E., Agongo, J., Sakyi, P. O., Asamoah, B. D., Bienibuor, A. K., Aidoo, P., and **Emahi, I.*** (2020). "Removal of Hg²⁺, Pb²⁺, Zn²⁺ and Cu²⁺ ions from contaminated water using Caladium bicolor (wild cocoyam)". *Preprints-Research Square*. 10.21203/rs.3.rs-22625/v1
3. **Emahi, I.**, Gruenke, P. R., Mitchell, M. P., and Baum, D. A.* (2015). "Redox cofactor-aptamer complexes as possible catalysts for biofuel cells". *Preprints-ACS, Division of Energy & Fuels.*, 60(1), 130-131.
4. **Emahi, I.**, Sonnenberg, D. M., and Baum, D. A.* (2013). "DNA aptamers for redox cofactors as possible catalysts for biofuel cells". *Preprints-ACS, Division of Energy & Fuels.*, 58(2), 428-429.

C) Books

1. Issifu A. R. and **Emahi, I.*** (2020). "Removal of heavy metals from water: a biofiltration with raw versus activated coconut shells". (Lambert Academic Publishing: Mauritius). ISBN-10: 620-053-0904.
2. **Emahi, I.** (2009). "Investigating Sewage Pollution in Watercourses – The Case of Ruscombe Brook in the UK". (VDM Dr. Muller: Germany). ISBN-13: 978-3639214956

Selected Conference Presentations

1. Wood, M. H., Willyam, S. J., Abugrey, M., Zhang, Z. & **Emahi, I.** In vitro Selection Strategies for the Identification of DNA Aptamers for Arsenic. *Fall 2023 American Chemical Society (ACS) National Meeting and Exposition, San Francisco, CA. August 15, 2023*
2. **Emahi, I.**, Bensah, Y. D, Boakye, A., Danu, B. Y., & Asmoah, B. D. Preferential binding of coconut shell adsorbents to copper over mercury in aqueous solution. *Atlantic Basin Conference on Chemistry (ABCCChem), Marrakech, Morocco. December 14, 2022*
3. **Emahi, I.**, Issifu, A. R., Sakyi, P. O., Vanderpuije, P. B. Effectiveness of raw versus activated coconut shells for removing arsenic and mercury from water. *Spring 2020 American Chemical Society (ACS) National Meeting and Exposition, Philadelphia, PA. March 24, 2020*
4. **Emahi, I.**, Mitchell M. P., and Baum, D. A. Characterization of Pyrroloquinoline Quinone (PQQ) - Aptamer Complexes as Possible Catalysts for Biofuel Cells. *2015 Sigma Xi / IFSA Research Symposium & Spring Meeting, Saint Louis University, May 04, 2015. (Poster presentation).*
5. **Emahi, I.**, Gruenke, P. R. Mitchell, M. P., and Baum, D. A. Redox CofactorAptamer Complexes as Possible Catalysts for Biofuel Cells. *249th American Chemical Society (ACS) National Meeting and Exposition, Denver, CO. March 24, 2015.*
6. **Emahi, I.**, Mitchell M. P., Gruenke, P. R., and Baum, D. A.. Developing optimal MWCNTmodified electrodes for studying the electrochemistry of key redox cofactors and their complexes with aptamers. *249th American Chemical Society (ACS) National Meeting and Exposition, Denver, CO. March 24, 2015.*